

P. O. Box 232
Kerrville, Texas

November 15, 1951

AIR MAIL

To: A. L. Smith, Sanibel, Fla.
C. C. Skipper, Sanibel, Fla.

From: R. C. Bushland, In Charge, Kerrville, Texas

Subject: Ms. 1311, Entitled "Screw-worm Surveys in the Southeastern States 1944-1951," by A. L. Smith and C. C. Skipper.

Enclosed is the approved ribbon copy of your manuscript mentioned above. Since we do not know who is editor of the Florida Entomologist, would you please submit this manuscript.

I have been asked to prepare a general article on screw-worm biology and control for a livestock growers' magazine called "The Cattleman." The material in your manuscript will be most helpful to me in describing the screw-worm situation in the Southeast. About the only information lacking in your paper is how far north and west screw-worm flies migrated in the Southeast before cold weather stopped their activity. Would you please indicate on an outline map of the southeastern states the maximum distribution of flies this year.

Enclosure

SCREW-WORM SURVEYS IN THE SOUTHEASTERN STATES 1944-1951

Presented at the Meeting of the Florida Entomological Society
at Winter Haven, September 14, 1951

A. L. Smith and C. C. Skipper

Surveys in the Southeastern States were begun in 1944 by the U. S. Bureau of Entomology and Plant Quarantine to determine the incidence and relative abundance of screw-worms, Callitroga americana (C. & P.). The primary objective of these surveys was to keep the livestock industry and the distributors of screw-worm remedies informed regarding distribution and abundance of screw-worms. Livestock owners were informed of available screw-worm remedies and how to use them. Livestock-management practices were outlined to reduce the number of screw-worm cases. Information on the distribution and abundance of the pest formed the basis for allocation of critical materials for screw-worm control, and manufacturers and distributors were in a position to supply remedies where they were needed.

The information on screw-worm distribution and abundance was obtained by personal contacts with livestock owners, agricultural extension officials, agricultural experiment station personnel, county agents, vocational agricultural agents, Soil Conservation Service field personnel, Bureau of Animal Industry inspectors, Fish and Wildlife Service biologists, veterinarians, and merchants.

During the years 1944 to 1948 screw-worms overwintered only in the peninsular portion of Florida. The northern limit of overwintering during those years extended in a line across the State from Fernandina to Perry and to the Gulf, while the southern limit extended from St. Augustine to Gainesville and to the Gulf.

During the extremely mild winter of 1948-49 screw-worms overwintered practically over the entire area infested the previous summer, or a radius of 200 to 250 miles north and west of the normal overwintering area. Screw-worms were active that winter over Florida, except for a few counties in west Florida, along the Atlantic coast to Charleston, South Carolina, approximately the southern half of Georgia, and a small area in southeastern Alabama.

Owing to this wide range of overwintering, screw-worms spread to areas to the Southeast where they had never been known to occur before. Populations were extremely high in some areas, and loss to the livestock industry was heavy.

A serious situation then arose, since many stockmen and farmers in areas where screw-worms normally do not occur were inexperienced in the control of this pest. In these areas it was necessary to set up an educational program, which dealt with methods of prevention and control. News releases to the press, circular letters to livestock owners, radio-broadcast programs, and public meetings were handled through the Agricultural Extension Service.

Once the overwintering areas were established, forecasts were made of the distribution of screw-worms. Warnings were sent out from the Bureau to extension officials in all the Southeastern States. Through county agents and the educational program, livestock owners were advised of the danger of a screw-worm outbreak, were taught to recognize screw-worm cases, and were given instructions on methods of prevention and control.

During the extremely mild winter of 1948-49 screw-worms overwintered practically over the entire area infested the previous summer, or a radius of 200 to 300 miles north and west of the normal overwintering areas. Screw-worms were active that winter over Florida, except for a few counties in west Florida, along the Atlantic coast to Charleston, South Carolina, approximately the southern half of Georgia, and a small area in southeastern Alabama.

Due to this wide range of overwintering, screw-worms spread to areas to the Southwest where they had never been known to occur before. Populations were extremely high in some areas, and loss to the livestock industry was heavy.

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Dealers in livestock remedies were requested to stock Smear 62 and other approved treatments. This procedure resulted in a fairly adequate distribution of materials. Even with this precaution, there were some temporary shortages of remedies, and ineffective control methods such as gasoline, kerosene, spirits of turpentine, linaments, and honey were applied. Some farmers in North Carolina used the last-mentioned materials to induce screw-worms to come out of the wounds of the animals.

By midsummer of 1949 the shortage of remedies became so acute at Whiteville, Columbus County, North Carolina, that McNeill's Drug Store chartered a private airplane to fly a cargo of Smear 62 in from Charleston, South Carolina. By the time the plane returned, it was reported that 50 to 60 people were standing in line to buy the material. It was estimated that this one county alone had at least 15,000 cases of screw-worms during the season. Some of the older veterinarians in North Carolina reported they had never seen or heard of a case of screw-worms before 1949.

The unprecedented radius of screw-worm distribution over the Southeast in 1949 covered all the entire states of Florida, Georgia, Alabama, South Carolina, and North Carolina, also eastern Mississippi, southwestern Kentucky, southern Virginia, and mos of Tennessee. Most of the outbreaks reported in Mississippi, Kentucky, and western Tennessee originated through the medium of infested livestock shipped into these areas.

In addition to those areas, a serious localized outbreak of screw-worms occurred in New Jersey in 1949 as a result of the shipment, ⁱⁿthe latter

part of April, of 704 head of feeder steers from Polk County, Florida, to the Helins Stock Farm at Jobstown, New Jersey. In the latter part of June the insects were identified as screw-worms. By the time the outbreak was brought under control it was estimated that over 1,000 cases had occurred in the area surrounding the Helins Stock Farm. This screw-worm outbreak is the only one ever known to occur in New Jersey.

The extremely mild winters of 1948-1949 and 1949-1950 permitted screw-worm survival over a greater radius of the Southeast than ever before. Northern limits of screw-worm survival for the winter of 1949-1950 extended approximately from New Bern, North Carolina, westward to include the southeastern corner of North Carolina, the southern two-thirds of South Carolina and Georgia, and the southern half of Alabama and Mississippi, or a radius of 150 to 200 miles beyond the limit of the previous winter.

During the season of 1950, screw-worms spread over a larger area than in 1949, but population build-up was not so heavy in general, and livestock losses were not so great, because of the educational work done on preventive and control measures in 1949.

In contrast to the two previous years an opposite extreme condition occurred in the winter of 1950-1951 in the Southeast. On November 24, 1950, a sudden hard freeze, followed by several weeks of low temperatures, brought screw-worm activity to an end over most of the southeastern region. The final overwintering area was established at a line extending across the state of Florida from Tampa to Cocoa -- at least 125 miles farther south than screw-worms had ever been known to overwinter before. The small area of winter survival, the low winter population, and the late spring followed

part of April, of 704 head of feeder steers from Polk County, Florida, to the Helina Stock Farm at Hoboken, New Jersey. In the latter part of June the insects were identified as scow-worms. By the time the outbreak was brought under control it was estimated that over 1,000 cases had occurred in the area surrounding the Helina Stock Farm. This scow-worm outbreak is the only one ever known to occur in New Jersey.

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by a prolonged drought, all contributed to the slow population build-up and the northern migratory movement.

By the middle of August 1951 a general infestation was established in all of Florida east of Leon County. A few isolated cases were reported in west Florida and southern Georgia. The general population was still low at that time, except for a few localized concentrated outbreaks in areas where woods hogs were abundant. These animals are important factors in screw-worm control, as they are not given the same care as other animals.

The Bureau of Entomology and Plant Quarantine developed at its Kerrville, Texas, laboratory a new screw-worm remedy known as smear 335, the formula of which was released to the public in the fall of 1950. This smear contains 3 percent of lindane and 35 percent of pine oil, which accounts for the number "335."

This remedy has not yet become well established in the Southeast, owing to short demand for remedies this year and a large carry-over of materials on hand from last year. The material is rapidly gaining favor and is the most effective screw-worm remedy now known.

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